

## REMARKS

This Amendment is submitted in response to the Examiner's Answer mailed on June 8, 2011. A Request for Continued Examination ("RCE") (\$810.00) is submitted herewith. The Director is authorized to charge \$810.00 for the RCE and any additional fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-00424 on the account statement.

Claims 6-10, 12-14 and 16-23 are pending in this application. Claims 1-5, 11 and 15 were previously canceled without prejudice or disclaimer. In the Final Office Action, Claims 6-10, 12-14 and 16-23 were rejected under 35 U.S.C. §103. In response, Claims 6, 12, 16, 19 and 22-23 have been amended, and Claims 24-29 have been newly added. The amendments and new claims do not add new matter. At least in view of the amendments and/or for the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Final Office Action, Claims 6-7, 9, 12-13, 16, 19-20 and 22-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent Publication No. 2002-075368 to Yamaura (English language translation provided by the Patent Office referred to herein as "Yamaura") in view of U.S. Patent No. 6,258,483 B1 to Abe ("Abe") and International Patent Publication No. WO 00/02280 to Kurose et al. ("Kurose") as evidenced by U.S. Patent Publication No. 2002/0192137 to Chaloner-Gill et al. ("Chaloner-Gill"). In response, Applicants have amended Claims 6, 12, 16, 19 and 22-23. In view of the amendments and/or for at least the reasons set forth below, Applicants respectfully submit that the cited references are deficient with respect to the present claims.

Currently amended independent Claims 6, 12, 16, 19 and 22-23 recite, in part, a positive active material wherein: the surface of the particles of lithium nickelate are uniformly covered with the olivine compound such that the olivine compound forms a layer having a thickness of about 0.1  $\mu\text{m}$  to about 10  $\mu\text{m}$  around the lithium nickelate particles, and a content of the olivine compound in the positive active material ranges from 5 wt% to 50 wt%. By uniformly covering the surface of the lithium nickelate particles with the claimed amount of olivine compound and forming a layer having the claimed thickness surrounding the lithium nickelate particles, rather than merely adhering the olivine compound at random to the lithium nickelate particle surfaces, an improved charge/discharge capacity and high-temperature stability can be obtained. See, Specification, page 2, paragraph 19; page 3, paragraph 42; page 4, paragraphs 45-46 and 53-54. In contrast, the cited references are deficient with respect to the present claims.

For example, even if combinable, *Yamaura*, *Abe* and *Kurose* fail to disclose or suggest a positive active material wherein a content of the olivine compound in the positive active material ranges from about 5 wt% to about 50 wt% as required, in part, by independent Claims 6, 12, 16, 19 and 22-23. *Yamaura* merely discloses that 3.3 wt% of  $\text{LiFePO}_4$  (1.0 g) is mixed with its lithium nickelate particles (30.0 g) to cover the front face of its particles with the olivine compound. See, *Yamaura*, paragraph 54. The present application teaches that if the amount of olivine compound is less than 5.0 wt %, the number of particle of the olivine compound covering surfaces of the lithium nickelate particles is too small and, thus, will not sufficiently improve the high-temperature stability of the battery. See, Specification, page 4, paragraph 45. There is no dispute that the amount of olivine compound in *Yamaura* is below the claimed range of 5-50 wt %. See, Examiner's Answer, page 6, lines 8-9.

Nevertheless, the Patent Office asserts that it would have been obvious to modify the amount of olivine compound mixed with the lithium nickelate particles to arrive at the claimed range based on the teachings of *Abe*. See, Examiner's Answer, page 6, lines 10-19. However, *Abe* fails to disclose adjusting the amount of olivine compound coated on lithium nickelate particles. Instead, *Abe* is entirely directed to coating nickel hydroxide powders with cobalt hydroxide powders and merely teaches that the amount of cobalt hydroxide can be adjusted to obtain a desired capacity. See, *Abe*, column 13, lines 38-56. The Patent Office relies on *Kurose* merely for the disclosure of  $\text{LiNiO}_2$  as a positive electrode active material. See, Examiner's Answer, page 6, lines 21-22; page 7, lines 1-12. Nowhere do *Abe* or *Kurose* teach or even suggest varying the amount of olivine compound coated on a positive active material. Thus, even if combinable, *Yamaura*, *Abe* and *Kurose* fail to disclose or suggest a positive active material wherein a content of the olivine compound in the positive active material ranges from about 5 wt% to about 50 wt% in accordance with the present claims.

Moreover, one of ordinary skill in the art would have no reasonable expectation of success in adjusting the amount of olivine compound in the positive active material of *Yamaura* based on *Abe*. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art." See, M.P.E.P. §2143.01(III) (2010). *Yamaura* is directed to using a nickel-type positive electrode active substance to increase the capacity of a lithium secondary battery. See, *Yamaura*, paragraph 7. *Yamaura* is concerned only with the mixing temperature of its components rather than the weight percent of  $\text{LiFePO}_4$ . See, *Yamaura*, paragraphs 42-43.

In contrast, *Abe* is entirely directed to improving the cycle characteristics of an alkaline secondary battery by forming a positive active material in which cobalt hydroxide is mixed in the nickel hydroxide. See, *Abe*, column 13, lines 38-56. *Abe* fails to suggest or even mention coating lithium nickelate particles with  $\text{LiFePO}_4$  or another olivine compound, or varying the amount of positive active material coating in a lithium ion secondary battery. *Abe* further fails to suggest any benefit in varying the amount of olivine compound coated on a positive active material. As such, one of ordinary skill in the art would have no reasonable expectation of success in varying the amount of olivine compound in the positive active material of *Yamaura* to arrive at the claimed range based on the teachings of *Abe*.

Accordingly, Applicants respectfully request that the rejection of Claims 6-7, 9, 12-13, 16, 19-20 and 22-23 under 35 U.S.C. §103(a) to *Yamaura*, *Abe* and *Kurose* be withdrawn.

In the Final Office Action, Claims 10 and 14 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Yamaura* in view of *Abe* and *Kurose*, and further in view of U.S. Patent No. 6,391,493 to Goodenough et al. ("*Goodenough*"). For at least the reasons set forth below, Applicants respectfully submit that the cited references are deficient with respect to Claims 10 and 14.

As discussed previously, even if combinable, *Yamaura*, *Abe* and *Kurose* fail to disclose a positive active material wherein a content of the olivine compound in the positive active material ranges from about 5 wt% to about 50 wt% as required, in part, by independent Claims 6 and 12 from which Claims 10 and 14 depend. The Patent Office relies on *Goodenough* merely for the disclosure of  $\text{LiMnPO}_4$  as the olivine compound of the positive active material. See, Examiner's Answer, page 7, lines 20-21; page 8, lines 1-9. Nowhere does *Goodenough* teach or even suggest a positive active material containing the claimed amount of olivine compound, nor does the Patent Office cite support for such claimed element. As such, even if combinable, *Goodenough* fails to remedy the deficiencies of *Yamaura*, *Abe* and *Kurose* with respect to Claims 10 and 14.

Accordingly, Applicants respectfully request that the rejection of Claims 10 and 14 under 35 U.S.C. §103(a) to *Yamaura*, *Abe*, *Kurose* and *Goodenough* be withdrawn.

Applicants further note that Claims 24-29 have been newly added. The new Claims are fully supported in the Specification at, for example, page 6, paragraph 74; page 7, paragraph 93; page 8, paragraph 114; page 9, paragraph 118. No new matter has been added thereby.

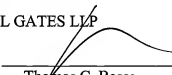
Applicants respectfully submit that the subject matter as defined in the newly added claims is patentable over the cited art for at least substantially the same reasons discussed above.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

K&L GATES LLP

BY



Thomas C. Basso  
Reg. No. 46,541  
Customer No. 29175

Date: August 8, 2011